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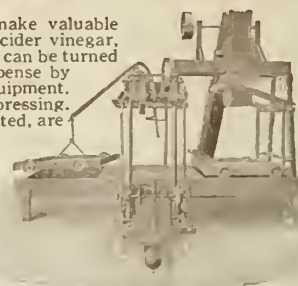
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ECONOMY in buying is getting the best value for the money. not always in getting the lowest prices. PEARSON prices are right.

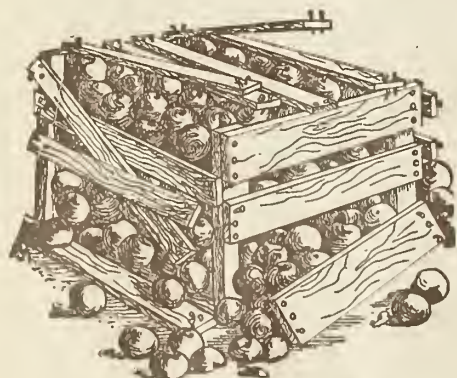
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BEFORE using Cement Coated Nails

Western Cement Coated Nails for Western Growers

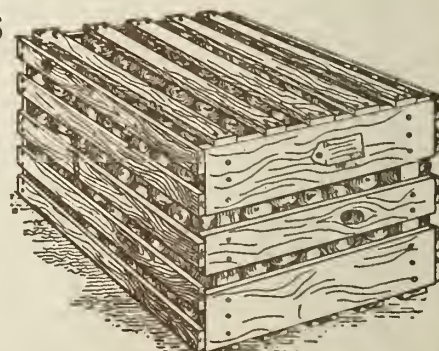
Our Cement Coated Nails are always of uniform length, gauge, head and count. Especially adapted to the manufacture of fruit boxes and crates. In brief, they are the Best on the Market.

Write for Growers' testimonials.

Colorado Fuel & Iron Co.

DENVER, COLORADO

Pacific Coast Sales Offices
Portland, Spokane, San Francisco
Los Angeles



AFTER use of C. F. & I. Co.'s
Cement Coated Nails

FACILITIES TO SERVE QUICKLY

You can now have any number of Bushel Shipping Baskets anywhere at almost any time. The time will be regulated only by shipping restrictions made by the government.

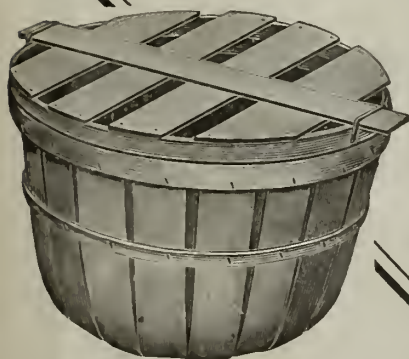
This great sales organization was created to enable basket users to get the right quality of baskets at the right price and at the desired time.

Our facilities to serve speedily and satisfactorily are demonstrated by the fact that because of our ability to ship 765,684 baskets when needed, the whole Georgia peach crop was saved.

The Bushel Shipping Basket

—is the Universal Package. It is preferred by jobbers and retailers. Easiest to handle and gives you the largest net profit.

A sample basket will be gladly sent on request to all users of over three hundred baskets per year.



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An interesting bulletin will be sent to you regularly and to your friends whom you think would be interested in fruit, produce and shipping news.

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Box Strapping and Tie Buckles

HOLD WHERE OTHER METHODS OF PACKING FAIL



Cold rolled flat wire, lacquered finish or galvanized, for use with tin seals. No nails used in this application.

Packed in bbls. of 500 lbs.

Acme Steel Box Strapping in coils of 300 feet, 20 coils to a case. Larger coils of 3,000 feet. This strapping is used with or without nails and is lacquered finished.



No. 4

Acme No. 4 Bale Tie Fastener, used with No. 17-18 round wire. Holds securely and has no prong to break off.

Packed 50,000 to a bbl.

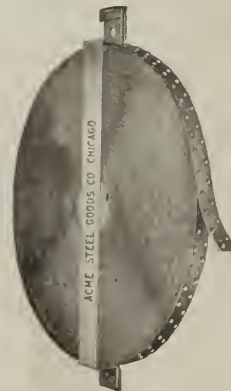
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Acme Special Nailless Strap

Acme Steel Goods Co., Mfrs.

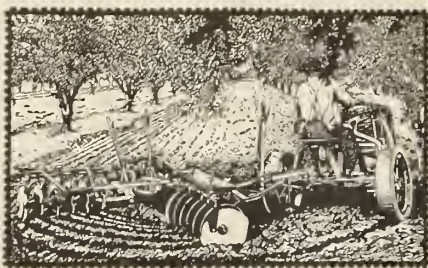
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Full Power on Turns

Because of the Single Track

Will the tractor you buy turn in a 10-foot circle (5-foot radius) **pulling as strong on the short turns as on the straightaway**—and will it do that without **slipping one side or one wheel?** That's of vital importance! Many tractors work well when pulling **straight**—it's on the **turns** that you will get **good or poor** service from your tractor.

The Bean TrackPULL Tractor is the only small **orchard and vineyard** tractor made that delivers **full power** on short turns and it turns without slipping one side, pivoting or doing anything else that a tractor shouldn't do.

Many tractors will **turn themselves** around all right, but the tractor you need, whether in **orchard, vineyard or field work**, must take the **tools around** too, and keep them **at work** all the way around. This requires **full power** on the turns.

This remarkable machine is built on patented **FRONT-DRIVE** principle—you steer with the single track which does all the pulling whichever way you go. You can turn within the same row (see illustration above) **without lifting out the tools** making as short a turn as with a team!

Absolutely no other tractor acts so like a team while doing three times as much, is so handy, so efficient, so staunch and so **protected against over-strains!**

You'll want the Bean TrackPULL eventually. Send coupon at once for catalog, complete description and name of nearest demonstrating agent.

Don't buy a tractor that does less. Don't do without one that does so much.

BEAN TrackPULL Tractor

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New Features in 1919 Model

- 1—Motor—Improved oiling system; improved carburetor control; governor equipped.
- 2—Track Rollers—Provided with hardened steel thrust washers.
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- 4—Bearings—Provided with improved dust protected greasing facilities.
- 5—Rear Wheels—Provided with dust cap, wear resisting bushings and improved greasing facilities.

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Bean Spray Pump Co.,
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Send me catalog and full information without obligation on my part.

Name.....

Street.....

City.....

County.....State.....

No. of acres.....Kind of crops grown.....

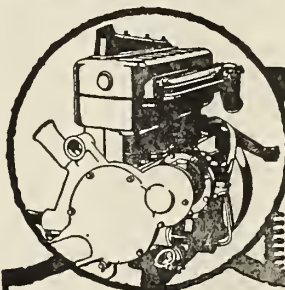
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Points to remember when consigning
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Specialists in Apples

CABLE ADDRESS: BOTANIZING, LONDON



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They know from the records of their service departments—and we know from exhaustive tests—that Zerolene, correctly refined from selected California asphalt-base crude, gives perfect lubrication with least carbon deposit. Get our lubrication chart showing the correct consistency for your car.

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of Modern, Progressive Fruit Growing
and Marketing.

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VOLUME XIII

PORTLAND, OREGON, OCTOBER 1, 1918

NUMBER 4

Apple Standardization Work in California

By Geo. P. Weldon, Chief Deputy Commissioner of Horticulture, Sacramento

WITHOUT doubt the apple is the most cosmopolitan of all our fruits, being adapted to the various climatic conditions throughout the Union. Practically every state boasts of some section where this fruit reaches its prime. The Bureau of Crop Estimates of the United States Department of Agriculture, in reporting upon the commercial apple crop of the Union, lists 41 out of the 48 states as having a sufficient amount of this fruit to be considered commercially producing states. The backbone of the industry has been in the East, as the production of New York, Pennsylvania, Virginia, Ohio and the New England States has far exceeded any other other section of the country. Of recent years the Northwestern and Rocky Mountain States have seen a tremendous increase in acreage and production, until at the present time they rank a close second to the Eastern apple belt mentioned. Statistics of the Bureau of Crop Estimates published July 10, 1918, show that the commercial apple crop of the United States for the year 1917 was 67,257,000 boxes. Of this amount the States of Arizona, Montana, New Mexico, Utah, Colorado, Oregon, Idaho, California and Washington produced 25,689,000 boxes, or 38 per cent of the total apple crop of the United States. In this list of states Washington is by far the heaviest producer with a crop in 1917 amounting to 13,860,000 boxes. Its rank among the various apple-producing states of the Union is now second, New York only exceeding Washington production. These figures are not only of great interest but are also of such magnitude that we cannot help but pause to think of the possibility of the apple industry developing to a point where there is danger of its becoming unprofitable. It is estimated that the crop for 1918 will be somewhat larger than that of 1917, or, to quote the exact figures of the Bureau of Crop Estimates, there will be 77,133,000 boxes produced this year.

With no other fruit is there the same chance of overproduction as with the apple. Fortunately from a market standpoint there is a great variation in the size of the crop from season to season and during seasons of light pro-

duction prices are very apt to be satisfactory. On the other hand, during seasons when the crop is generally good prices are not apt to be good. Therefore during seasons of a light crop the marketing question solves itself, but during seasons of a heavy crop something must be done in order that the producer of apples may receive sufficient returns to pay the expenses of harvesting. Everyone recognizes the fact that it pays to put up a good pack. Good fruit practically every season sells for good prices, while poor fruit may be a drug on the market. Another fact is recognized by everyone who is familiar with the fruit industry and that is that large quantities of inferior fruit in any market have a tendency to lower the prices of good fruit, and even during seasons of a light crop the marketing of the inferior grade may not be profitable. We have in California a large market in San Francisco. For years it has been considered one of the

poorest markets with respect to the quality of fruit that is handled therein that may be found anywhere in the country. The reason for this is that California fruit growers have long since recognized the fact that it does not pay to ship the inferior grades of fruit into the Eastern market. Consequently they have used San Francisco as a dumping ground for all of their wormy, scabby and otherwise trashy fruit. This condition is so bad that it has been claimed by many who are in close touch with fruit marketing problems that San Francisco will not buy good fruit. An investigation will reveal the fact that it is not because she does not want good fruit, but because in the past it has been almost impossible for her to get it. At the present time a serious attempt is being made under our present fruit standardization law to improve the condition of San Francisco's market and we are pleased to report that in this already we have been very successful.

Standardization of the apple pack by law began in California in 1915. After operating under the act passed during that year for two seasons it was found to possess many weaknesses which made it very difficult to enforce. Consequently in 1917 the legislature amended the previous act, and as a result we are now operating under a law which we believe will prove very satisfactory and of inestimable benefit to the apple industry. The present act requires that only three grades of apples may be packed. These grades are to be known as "California Fancy," "B" grade and "C" grade. In the case of apples packed in other states for shipment to California exactly the same grade requirements must be met. However, instead of the first grade being California Fancy the designation would be "Fancy" in the case of apples packed in other states. The California Fancy grade consists of well grown, properly matured specimens of one variety, hand picked, with stems retained, well colored for the variety, uniform in size, well packed and free from insect pests, diseases, etc. A variation from this standard is allowed, not to exceed 10 per cent total defects in one package, nor to exceed 3 per cent

**In her
Wheatless
Kitchen**



**she is
doing her
part to
help win
the war**

Are you doing yours ?

UNITED STATES FOOD
ADMINISTRATION

of any one defect. A variation in size of three-eighths inch, measured by the smallest diameter, is allowed. The B grade differs from California Fancy only slightly. Apples that have codling-moth bites which have healed in the process of maturity may be packed in this grade, also fruit that is slightly misshapen. The variation in size and requirements respecting insect pests and diseases are exactly the same as in the case of California Fancy. The requirements of C grade are the same with respect to insect pests and diseases. This grade does not, however, require the careful sizing of the fruit and the law does not state any particular variation in size that will be allowed. The following chart shows in a graphic way the requirements of the apple standardization act:

CHART ILLUSTRATING REQUIREMENTS OF THE APPLE STANDARDIZATION ACT OF 1917.

Prepared by State Commission of Horticulture Sacramento, California.

	California Fancy	B Grade	C Grade
Well grown	x	x	
Properly matured	x	x	x
One variety only	x	x	x
Hand picked	x	x	
Stems retained ¹	x		
Well colored for variety	x		
Uniform size ²	x	x	
Well packed	x	x	
Free from			
Insect pests and diseases ³	x	x	x
Visible rot	x	x	x
Visible dry rot	x	x	x
Visible Baldwin spot	x	x	x
Insect bites ⁴	x	x	
Bruises, frost marks, sunburn and other defects ⁵	x	x	
Virtually free from dirt	x	x	

Box Marking.

- Grade (California Fancy, B, or C). ⁶
- Number in box, or net weight. ⁷
- Variety. ⁸
- Name and address of packer. (Either first pack or repack.)
- Date when packed or repacked.
- No misleading statements.
- x in vertical columns indicates requirements of each grade.

Remarks.

¹ Gravensteins may be packed as "California Fancy" with stems removed.

² A variation in size not to exceed three-eighths of an inch, measured by the smallest diameter, shall be allowed.

³ Three per cent of any one defect, not to exceed 10 per cent total defects shall be allowed.

⁴ In "B" Grade, insect bites which have healed in the process of maturing and slightly misshapen apples shall be permitted.

⁵ An exception will be made of bruises and other defects necessarily caused in packing, and in "B" Grade slightly frost-marked or sunburned apples shall be allowed.

⁶ Stamps designating grade may be purchased from the State Commission of Horticulture at 1/2 cent each. State inspectors are paid from the fund accruing from sale of these stamps. When state stamps are not used the same grade requirements must be met and boxes stamped with proper grade in letters not less than one-half inch high.

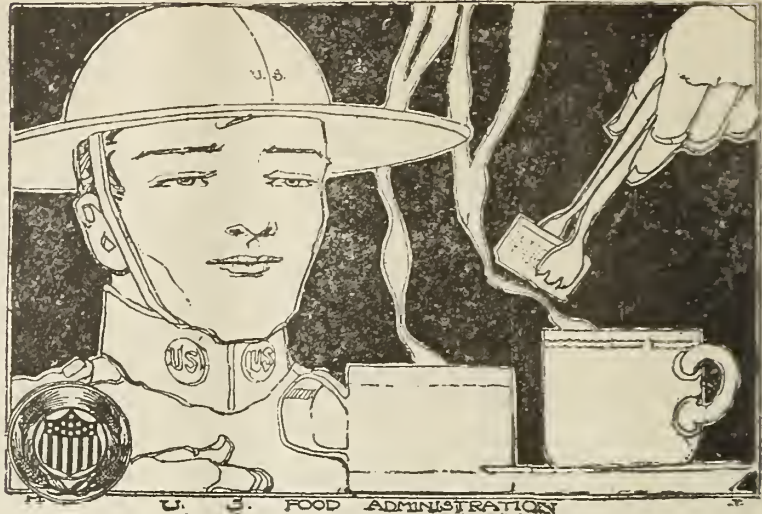
⁷ A variation of five apples more or less than the number stated shall be allowed.

⁸ If variety is unknown to the packer the statement "Variety unknown" must appear on the box.

Apples which do not conform to the packing requirements may be sold in bulk to by-products factories or consigned to a packer for packing.

The enforcement of the apple act is placed in the hands of the State Horticultural Commissioner. A fund to employ inspectors to carry out the provisions of the act is created by the sale of stamps or labels signifying the grade of the fruit for one-half cent each. These stamps are designed and printed by the State Commissioner of Horticulture,

In Who's Cup?



ture, and while their use is not compulsory it goes without saying that apples which are not packed under this stamp are subject to the closest inspection in the markets of California. Last season the sale of stamps in the two main producing apple districts, namely, the Pajaro Valley district, of which Watsonville is the leading city, and the Sebastopol district, brought in a fund of about \$9,000, which was sufficient to cover all costs of inspection. When the state stamps are not placed on packed boxes of apples California Fancy, B or C grade must be used to designate the grade of fruit packed, and such grade designations must be in letters not less than one-half inch in height. This point should be borne in mind by apple dealers in Oregon or other states who are shipping into California. Last season there were a number of shipments which violated the law with respect to the marketing of the grades. Necessarily time is required to educate the people in other states to the requirements of the California apple standardization act and we have many times been lenient when under the law we could have been otherwise.

The purpose of the apple standardization act of California is to promote and protect the apple industry of the state. In California, as elsewhere, there have been seasons when apple growers received such poor prices for their fruit that some of them contemplated going out of business, if they did not actually do so. The standardization of the pack has already meant much to our growers. Never before was the quality of fruit in a fancy pack as good as today. The state stamp, especially of the California Fancy grade, has meant that the fruit in packages upon which it occurred was good. The trade has come to accept this fruit as being first class without an inspection. While the work is in its infancy results have been such that we can but predict a successful future for the apple business of California because of the standardization of the pack.

As would be expected those who are

intrusted with the enforcement of this law meet with many difficulties. During seasons of light crops fruit is usually more wormy than during seasons when there is a heavy crop, and prices are very apt to be better. Consequently there is a tendency for the packer to place the poorer grade of fruit in the California Fancy boxes. To overcome this tendency the closest watch in the packing houses is necessary. Of course a violation in the packing of fruit will lay the packer liable to arrest and conviction, when a fine of not less than \$50 nor more than \$500 or imprisonment in the county jail for six months may be imposed. This severe penalty no doubt has a tendency to make the packer much more careful than he would be were there less danger of loss of money and time because of violations.

California utilizes large quantities of apples from Oregon and Washington each season. As a rule such fruit has been well packed and has commanded even higher prices in our markets than our own fruit. At times it is true that quantities of inferior fruit have been dumped in some of our larger markets. This practice will no longer be tolerated, since the apple standardization act makes it possible for us to condemn all shipments that are not up to the standard of the act. If California apples sold in the markets of this or other states are not up to the standard we would welcome information to that effect. On the other hand, when your apples come to us in a condition that is not satisfactory we feel that you should welcome information from us as to their condition. We want California apples to be of such a high grade that when they are placed in the markets in competition with your fruits they will stand an equal chance of bringing satisfactory prices. We hope that during the coming season all apples shipped into California from the states to the north of us will meet the requirements of the apple act with respect to grades and the pack in general. To that end your aid is earnestly requested.

What U. S. Bureau of Markets Does for Fruitgrowers

By R. L. Ringer, Bureau of Markets U. S. Department of Agriculture

THE activities of the Bureau of Markets are very varied and reach practically every producer and consumer in the country and embrace all branches of commerce in foodstuffs and wearing apparel grown or marketed in the United States. With that in mind, I shall try to discuss those features of the work which interest primarily horticulturists, and especially the horticulturists of the Northwest. With the Bureau's activities so broad, it is proper and necessary to understand the part of its work that I represent. I am engaged primarily in the distribution of information on the quantities of produce marketed and the values of the same as they go through the various commercial channels from the growers to the consumer. In this article it will be necessary for me to take up some of the more scientific branches of the service, with some of which I am fully conversant and of others I know only of the Bureau's work. The activities of the Bureau that touch fruit growers most closely are its work in the preservation of fruits and vegetables in transit and storage, the operations of the Federal Food Inspection Law, and the market news service with which I am connected.

The efforts of the Bureau for the preservation of foodstuffs from the time they are harvested until ready for consumption are of primary importance in this work. Many of the results of its experiments have become fundamental in the building of equipment and the practice of the trade. Of especial worth is its prolonged investigation in the refrigeration service given by the railroads, which has resulted in the production of a standardized refrigerator car, whose principle of construction has been accepted by the car manufacturers of the country and declared to be fundamental in all food cars they will make. The main features of this new car are more insulation, the building of racks or false floors, and newly-designed ice bunkers which facilitate ventilation and increase the efficiency of refrigeration. The old-style cars have ice bunkers built to the floor and refrigeration is by radiation, which, sometimes nearly freezes the product at the bunkers and may allow it to spoil in the middle of the car. The new cars, of which between 5,000 and 6,000 will be available for use this year, have ventilation from the bunkers both at the floor and the roof, so that the cold air is drawn from the ice along the floor, passes up through the load and, as it warms up, moves along the roof into the bunker and passes down over the ice, where it is cooled again. That keeps nearly an even temperature throughout the car, and in experiments it has been found to be actually a shade warmer next to the bunker at the roof than in the middle of the car. By this proper ventilation and circulation, it is possible to use salt rapidly to reduce the temperature when cars are first

loaded and, on experiments conducted from California to New York, produce has arrived in better condition with the consumption of 12,000 pounds of ice than in similar shipments in the old cars which consumed 20,000 pounds of ice. That saving in ice and improvement of condition of the fruit mean more money all along the line.

A next need of the industry is a proper heating car, and the Bureau is now carrying on extensive experiments, costing many thousand dollars, at Roseville, California, developing a heating system that can be applied to any refrigerator car, so that the time is not far distant when shipments of perishable products will be offered the ideal service of ice in the cars to preserve them in the warm part of the journey, which may terminate in a cold section, with heat to protect them, or vice versa.

Extensive experiments are also carried on in the methods of loading, because ignorance of the best methods have in times past taken an annual toll of hundreds of thousands of dollars

from the growers. First is the loading to prevent breakage. Railroad cars are handled roughly, and no ordinary nailing and bracing will hold the packages in place on a long journey, and they frequently arrive smashed or buckled and their valuable contents strewn about the car. Just recently I saw a car that had been on a short journey from Wenatchee to Portland in which 75 crates were destroyed and 150 others badly damaged. It is necessary to load properly for ventilation also. Hundreds of cars are annually loaded with capacity loads, stuff of all temperatures, jammed in together, without any ventilation, and arrive in market unfit for consumption. Aside from that, it is necessary to load to get proper benefit of the refrigerating service which you are paying for. If your load is so piled up that the cool air you are buying reaches only a small part of it, you are making a poor investment. This Bureau has investigated all of those phases of loading, and has issued in-

Continued on page 19



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You may be uneasy about his health. An experience of eighteen months at the front has shown me that the boys are far healthier in the service than they were at home. The strenuous outdoor life has hardened his muscles, bronzed his skin, put the roses in his cheeks, brightened his eye, quickened his step, made a better man of him physically than he was before entering the service. The athletic training received in the "Y" has added greatly to his physical welfare. The "Y" has sent trained athletes, professional ball players, foot ballists, physical directors, to teach him how to exercise and to make it pleasant for him. While the boy is enjoying his sports he is building up his manhood. If you could see him now, as he appears fresh from engaging in some athletic sport, you would hardly recognize him. He has improved so much since he left you less than a year ago.

Maybe you think he is lonesome, pining away for his friends back home. That's where you are mistaken. He has found a bunch of pals at the "Y". Every evening they gather in the huts—these pals, to engage in a friendly game of checkers or read the papers and the magazines or discuss the affairs of the day. His lonesomeness is removed by seeing the pictures, the best the country can send, or in seeing the vaudeville provided by the "Y", part of which is amateur, the soldiers furnishing their own entertainment and a part furnished by professionals who have volunteered to go to France to entertain the boys. He sees good shows that will not harm his morals but will amuse and instruct him. Or he takes part in a boxing or wrestling match or a game of basket ball. You may rest assured that he is not lonesome because the "Y" has arranged to amuse and instruct him during his idle moments. Before he leaves the hut he will write that letter back home. That letter with the Red Triangle on the envelope which you so delight to receive.

For one of the most important works that the "Y" is doing is to keep the boys in touch with home. Boys are careless. They love their parents, but sometimes forget to write. They expect

The Link Between the Soldier and Home

By William H. Crawford

OUR boys have gone to the front. They are giving their all for the sake of their country. America's young manhood is facing the cannon's mouth at the call to duty. But they are not the only heroes. The mothers back home who have sent them at their country's call, to battle with the Hun, are equally as patriotic, equally heroic.

The boys have the excitement, incident to martial life, the companionship of other youngsters, the touching elbows with their fellow soldiers to strengthen and buoy them up. On the other hand, the mother in the silent watches of the night is thinking of her boy in France, and, as the tears which she hid on his leaving, fill her eyes, she is hoping and praying that her boy is safe, that he will not only escape the dangers of warfare, the enemy bullets, but that his physical, moral and religious welfare will be looked after. She is dreading that he will be contaminated by the army life, that he will

fall with evil associates because of the absence of her restraining influence.

She has heard that in France the morals of the people are lax. She knows that her boy is young and that he needs a guiding hand if he is to keep his promise which he made on leaving her—that he would be a good boy. She need not be afraid. Her boy has an older brother in France to look after, protect and guide him. While no influence is equal to that of a mother's, it is comforting to her to know that he is not without the restraining and ennobling influence of men devoting themselves to his betterment and welfare—men who take the place of his parents, strengthen his resolutions, guide his faltering steps, furnish him with clean interests and amusements rather than the evil ones he might be tempted to turn to in his lonesomeness. They interest him in wholesome sports, entertain him in his idle hours, console him in his moments of depression, and are good, wholesome, earnest, real pals.

their parents to take their love for granted. It is not because he has ceased to love you but because so many other things take up his time. The "Y" men constantly remind the youngsters to keep in touch with home. Every "Y" hut has signs in it, "Have you written that letter to mother," "Now is a good time to write home." The secretaries have a personal acquaintance and friendship with the boys and will frequently ask: "Well, son, have you written to mother this week? No! Well, take some paper and write to her now; she wants to hear from you." It is not the absence of love, but just carelessness on his part that made him fail to write and almost always he will take the paper, saying: "Yes, I guess I had better write now." You may rest assured that many of the letters that you have received were prompted by some "Y" worker who knew what it meant to a mother back home not to hear from her beloved son.

Perhaps your boy has not had all the educational privileges that he needed. The strenuous life on the farm may have handicapped his education, especially on some particular line in which he was interested that was not in the common-school course. Maybe he is longing to prepare himself in some subject but so far has never had an opportunity to do so. The "Y" has the greatest university in the world, more scholars, more teachers and a wider range than any other. Your boy may take up any subject in which he is interested. It is taught by men who have come from the best colleges in America and who are anxious to impart to him the instruction that he desires. He may learn A, B, C's or delve into the most abstruse subjects taught in the post-graduate courses of the universities.

While your boy is more healthy in the army than he was at home, there is a possibility of his being sick. Well, his health will be looked after carefully by "Y" representatives. Representatives of the "Y" visit the hospitals daily. They call to cheer the boys up, sit at his bedside and read to him. They carry him stationery and write his letters home. This is in addition to the scientific, skilled work done by the army surgeons and the Red Cross. The "Y" representing the visiting friend to the patient. When he is convalescing, he spends most of his time in the rest rooms of the "Y," which are prepared to be as homelike as possible.

General Pershing has entrusted the post exchanges entirely to the hands of the Y. M. C. A. Trade is largely disorganized near the front. There are few stores and those that are run are so thoroughly demoralized that it is impossible for the boys to secure the little luxuries that are necessary for his happiness and comfort. The boy can secure these at the post exchanges. Anything that the boys desire can be had here. The nearest approach to an accurate description of a "Y" canteen is an old-fashioned country store, where everything may be had, except in the post exchange the stock of women's furbelows is below par,—the sole purchasers

of such things being the "Y" women workers. Hot drinks are served, and even American soft drinks are to be had. In the huts more distant from the front soda fountains have been placed. Our boys miss this American luxury, it having not invaded France. At the "Y" huts he can walk up boldly and order a chocolate ice-cream soda as though he were in Portland. He can get his favorite American cigarette and at considerably less price than we Americans who indulge in the weed have to pay for it, for the exchange is run on the no-profit basis. The prices are established by the actual cost, plus the cost of transportation and over head expenses. And, if there is a surplus profit, this money is turned into the canteen fund for supplying the boys with free chocolate and coffee.

If it is necessary for your son to send money to you, the "Y" has undertaken to transfer the funds. They have a very elaborate exchange business—banking without profit. He deposits with the "Y" secretary the amount desired, who gives him an official receipt for the money. A list of these transfer funds are sent by the Paris "Y" office to New York and the "Y" sends its check to his mother with no expense attached. For the minute the "Y" gives him its receipt it is responsible for the delivery of the money to the addressee. It assumes all responsibility of it being lost in transit. Thousands of boys are utilizing this privilege and thousands of mothers are daily writing grateful letters to the "Y" thanking them for the funds which she needed so much.

In conclusion let me say that my experience is that the "Y" attempts to be a friend, protector and guide to the American soldier boy and the go-between him and his home.

Recipe for Delicious Tomato-Apple Catsup

Mrs. C. W. Batterson, of the Girls' Polytechnic School, is one of the prominent women of the city actively co-operating with the Food Administration in the effort to bring before the public the best recipes that make good, delicious and nourishing dishes and relishes and yet conserve foods, especially sugar. Mrs. Batterson, during the past week, gave special lessons in making dishes that called for a greater use of milk and others that economized in sugar.

Following is an original recipe for tomato-apple catsup that was tried by Mrs. W. P. Strandborg, of the Food Administration, and found delicious:

Tomato-Apple Catsup.—One crate tomatoes (ripe), half cup pickling spices, two large onions, two large green peppers, half gallon hot strained apple sauce, one cup sugar, quarter cup salt.

Cook tomatoes and pass through a strainer, removing all skins and seeds. Cut the onions and peppers fine and tie loosely in a cheese-cloth bag with the pickling spices. Add these to the tomato pulp; add salt and cook until only one-half as thick as desired. This will require but a short time. Then add the

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apple sauce and sugar and continue to cook until thick enough to bottle. If the tomatoes are solid and the apples steamed, the cooking of this catsup will require from one and one-half to two hours. This makes nine pints of catsup.

The amount of spices and salt called for in this recipe are very moderate, and be increased for those who like a very highly-seasoned product. The skins and seeds, when fermented, make a splendid amber-colored vinegar.

Advantages of this recipe are: The short time of cooking required saves labor and fuel; fallen apples, often a waste product, make a very good apple sauce; the short time of cooking permits the tomatoes to retain their bright red color and the apple sauce makes the color several shades lighter still. (This catsup, when bottled, has the color of commercial catsup); it has a superior flavor; it uses no vinegar, which is now high in price, and uses only a small amount of sugar.—*Oregonian*.

A good whitewash formula: (1) Quick lime, 62 pounds; water (hot), 12 gallons. (2) Common salt, 2 pounds; sulphate of zinc, 1 pound; water (boiling), 2 gallons. (3) Skimmed milk, 2 gallons. Slack the lime thoroughly in (1); dissolve the salt and sulphate of zinc in two gallons of water (2); pour (2) into (1) and add (3). Mix thoroughly. Two pounds of flour paste (dissolved in two gallons of hot water) may be added instead of the skimmed milk.

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Apple, King of Fruits—Cider, Queen of Drinks

By Frank B. McMillin, Mount Gilead, Ohio

FRUITS supply in superior form a number of elements that are absolutely essential to the well being of the human body and brain. But of all our varied and fascinating range of fruits none can hope to ever attain the popularity of the apple. There is no fruit that lends itself to such varied uses and none that can take its place as a food product. Apples lead all fruits in North America for the amount grown and the money value involved. Our total agricultural apple crop for one season would make ten piles as large as the Great Pyramid of Ghizeh, or would wrap a band around the earth at the equator a foot thick and seven feet wide. The immensity of the industry is little comprehended by most people. Almost every state in the Union produces apples and in most parts of the United States they are one of the leading staple products of the farm, whereas the larger share of other cultivated fruits rank as luxuries. Apples agree with everyone and are found everywhere. They are at once the poor man's fruit and the rich man's dessert. All ages, conditions and kinds of people relish them, yet the rightful place of the apple in our national diet is all too little appreciated.

As a matter of fact, apples merit a universal use as a medicine as well as a food. Analysis shows that they contain albumin, sugar, gum, malic acid, gallic acid, fiber, water and indispensable organic salts such as potassium, phosphorous, calcium, magnesium, silica and sulphur. The age-long veneration for this king of fruits is found to be well justified upon scientific investigation. So marvelously are health-giving properties combined in apples that blood and muscle, bone and nerve all receive peculiarly valuable nourishment and one can readily imagine that the ruddy hue of the apple is in a measure imparted to the complexion of the eater. The preponderance of base-forming elements in apples tend to neutralize the harmful effects of our ordinary American diet of too much meat and denatured cereals. The acids of the apples diminish the excess acidity of the stomach and purifies the blood. Their plentiful use will add to our happiness and length of days by aiding in the elimination of impurities from the system and strengthening the digestive processes.

When we consider that the skin and cores of apples are anything but digestible, we recognize that it is really the juice—some ninety per cent of the whole—that contains the valuable elements for which apples are justly famed. Pressing out the juice does not lessen the value or change the essence, but merely alters the form. Therefore, whatever food and medicinal properties may be ascribed to apples are likewise contained in pure, sweet cider. Furthermore, the chemistry of nature takes the raw juice and by the process of fermentation and clarification renders it highly agreeable to the palate and

even more effective as a tonic. All the mineral salts of the apple and all its esters and other desirable bodies are carried over into the cider, as will be attested by any chemist who takes the trouble to investigate.

Eminent physicians throughout the civilized world acknowledge the hygienic properties of cider and recommend it for quite a series of diseases such as indigestion, rheumatism, kidney trouble, stone, gravel and gout. As a preventive and cure for various gastric ills, cider is unsurpassed. Its wholesomeness as a beverage and effectiveness as a remedial agent is championed by many of the most distinguished physicians and scientists of Europe and America.

The objection of some that the use of cider may create an appetite for strong drink does not seem to be borne out by the facts. Few drinking men care anything for sweet cider; to many of them it is positively distasteful. On the other hand, nearly everyone who has no appetite for liquor is fond of good cider. This is especially the case with children. Ginger ale, coffee or tobacco are more likely to create an appetite for liquor than cider, as they are stimulants.

While the juice of the apple is converted first into cider, its usefulness as a food product increases as the cider is made into cider vinegar, apple syrup, boiled cider, cider jelly and, last but not least, apple butter. The pomace, which is rich in pectin, is also used very satisfactorily for jelly stock. In many places it is being used with splendid results as feed for cattle, hogs and sheep.

The market for good cider and cider products is far greater than the supply and the business offers unusual attractions. Wherever apples are grown great quantities of small, unmarketable fruit go to waste annually. These under-grade apples represent a valuable asset of good food as well as an excellent source of profit to the grower when properly utilized. An average of over four gallons of cider can be easily obtained from each bushel of these waste apples by the use of a modern hydraulic cider press. The investment required is not large and the upkeep is nominal. The pressing season comes at a time when farm work is usually not urgent. Very little mechanical knowledge is required for successful operating. There is undoubtedly room for a great many more cider mills throughout the apple-growing sections of our country.

Especially this year, the apple grower who permits fruit to lie on the ground and rot is not only losing good money for himself, but is wasting a much-needed food right at a time when great numbers of the world's population are actually starving. Gather up all your waste and surplus apples, take them to a modern hydraulic cider mill and make available just that much more good food. Besides the enjoyment of

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Early History of the Oregon Prune Industry

By H. S. Gile, Salem, Oregon

SOME twenty-five or thirty years ago the large acreage of prune orchards in the Willamette Valley were planted, the principal varieties being Italian, French, and Silver prunes. It was not long before experience proved that the Silver variety was not suitable or profitable, and most of the trees have been entirely eliminated from the orchards. In the Willamette Valley the Italian variety is mostly grown, the soil and climatic conditions being more suitable to its development, and it is found more profitable than the French or Petite variety. In the southern part of the state the French variety does very well and the acreage planted in that section is just about equally divided between the French and Italian varieties. Most seasons the French type is produced profitably and the quality is strictly A1, the climatic conditions having much to do with this.

In the early stages of the prune production the industry had its trials and setbacks, passing through the usual experiences of all new industries. There

was quite an acreage came into bearing within a year or two and no markets had been developed for our fruit. In fact, for two or three seasons conditions were so discouraging that quite a few of the growers grubbed out their orchards. The experience of others in an endeavor to borrow money to tide them over through the stress under which they found themselves, found it difficult to borrow on their orchards, financiers advising them that they would figure values minus the cost of grubbing out the trees, which of course would lower the valuation of their prune lands, so that in the early 90's prune orchards could have been bought very cheaply. The writer knew of one particular orchard which was taken back under mortgage when the owners were willing to sell on the then low valuation of the bare land, but this was the time when success for the prune industry was anything but assured and there were very few customers for the prune orchards.

In the early history of the prune production, Oregon prunes were shipped out in cotton sacks in their original condition. They were of course graded and sacked as to sizes, so that our goods were not at all inviting when compared with the finely packed goods of California. Many of our prune growers at that time realized that it was going to be necessary to improve on our quality and packing for shipment, so that in 1900 the Willamette Valley Prune Association was organized for the purpose of packing and marketing the Oregon prunes, most of the leading growers of this section at that time becoming members of the association. It was soon found that the association had undertaken a big task to market a new variety of dried prunes which was entirely unknown and with a flavor altogether different to that which the consuming public had been used to, but the growers started in to use greater care in the harvesting of their prunes and the association commenced to pack their product in 25-pound boxes, faced, and adopted a brand which they are still using, the Pheasant Brand, which is one of the best known brands for Oregon prunes in all the markets of the world where Oregon prunes are used.

About the year 1903 we had a large crop of Oregon prunes. The prices were low and growers got little or nothing for their goods. At lower prices the fruit was somewhat attractive to the general public, so that the Oregon prunes got a fair distribution, and from that time on we have noticed a steady improvement in the demand for Oregon prunes, until today markets have been opened up in all the leading cities of this country, Canada and Europe. This distribution has been accomplished at considerable expense and effort through advertising and demonstrations at all the leading expositions held in this country. Many medals have been received for the fine quality and pack of the well-known Pheasant Brand prunes packed and exhibited by the Willamette Valley Prune Association, which since its organization has been one of the largest factors in the packing and marketing end of the Oregon prune industry, until at the present time this industry is firmly established and there is a growing demand for the famous bearing prune orchards of our state and the Northwest. The production of prunes is now one of the largest fruit industries in the Willamette Valley, if not the largest, and we believe the prospect is more encouraging today than it has been at any time since its inception.

Wenatchee, Washington, is reporting the sale of a number of cars of apples at splendid figures. Many buyers are in the field and energetically at work.

Clergyman, age 36, desires position with fruit ranch. Capable wife, no children.

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HAVE YOU SUBSCRIBED TO THE FOURTH LIBERTY LOAN?

Dairying.—Every fruit grower should keep one or more cows. Our orchards are now demanding cover crops to maintain the humus and nitrogen content, and practically every fruit grower has a part of his orchard in cover crops, which affords feed for a number of cows, in accordance with the size of his place. Many fruit districts now have creameries, and these are meeting with wonderful success. Creamery and milk routes should be established in every fruit-growing section. With the present system of electric lines in many districts, and with the use of automobile trucks, milk and cream can be collected at a very small cost. In addition to the income received from dairying, a herd of cows have an additional value to the orchards in the improvement of the soil by the continuous manure afforded by the herd. A fruit grower with a few cows and a good separator can with very little extra expense keep a few pigs, which will very soon enable the fruit grower to pay off his mortgage, or if he is fortunate enough to have his place clear, he can soon tuck away a nice bank account or increase his subscriptions to Liberty Bonds. There are many good makes of cream separators, which can be run by hand power, or can be furnished with electric drive, and a fruit grower, in order to make the most of his butter fat and to save work, should have a good separator. A campaign has been inaugurated in Oregon which might be termed "Save-the-Herd Movement," which is under the joint auspices of the Oregon Agricultural College, the United States Food Administration, the State Dairy and Food Commission, the State Board of Health and the Oregon Dairy Council. Its object is to educate people to the food value of dairy products. Milk at the advanced cost is one of the cheapest foods the housewife can provide for her family—the energy value of a quart of milk is said to be equal to that of nine eggs. It is a well-known fact that the dairy herds of Europe are very badly depleted. When this war is over there will be an immense demand for dairy products, and unless we increase our supply of dairy animals, we will not be in a position to supply this demand. It is hoped through a good educational campaign that every fruit grower and farmer will enlarge his herd, so that we will be ready to take care of the increased demand for all dairy products.

Produce More Honey.—The United States produces annually about 250,000,000 pounds of honey. The honey production in the Northwest could be

increased very largely with very little increase in the cost of production. An orchard is an ideal place for bees during the blossoming period, and now with so many acres sown to cover crops, good pasture for bees is afforded during the entire season. Permanent courses in beekeeping are being introduced in agricultural colleges and extension work in beekeeping is now being conducted in many states. Apiculturists suffer the greatest loss in wintering, but in the Northwest the weather is never so very cold, and a cold spell does not last very long, so that with a very little care bees can be wintered with little loss. Because of the shortage of sugar, honey is being used for sweetening. The famous brand of French jam is preserved with honey instead of sugar. The uses of honey are unlimited, and with very little trouble and little expense every fruit grower can keep a few skips of bees. In addition to furnishing honey, bees are of additional value in the orchard, which cannot very well be estimated, coming from the work done by bees in pollenization. Many experiments have been conducted on certain limbs of the trees showing conclusively that with cross-pollenizing the apples on those branches were finer in quality than the apples on the rest of the tree.

"TAKE FRUIT FOR IT."

For "that tired feeling," "that aching back," "loss of appetite," "specks before the eyes," and various other disorders, troubles and discomforts associated with a lazy liver or defective working of other organs, Nature has this world-old advice: "Take fruit for it."

Apple Crop Estimates for 1918.—The September report on the apple crop of the United States issued by the Bureau of Crop Estimates, United States Department of Agriculture, places the entire crop of commercial apples in the United States at 24,076,000 barrels, as compared to 22,519,000 for 1917, showing an increase of 7 per cent over 1917. The box-apple producing states show a decrease of 16 per cent as compared to 1917. The production in Washington, Oregon and Idaho is estimated at about 20,666 cars of 750 boxes each, as compared to 24,900 cars in 1917. The Jonathan crop will be very light, which is due to the fact that Idaho suffered a severe loss from frost. Spitzenbergs and Delicious will be below the average. Newtowns and Winesaps will average the best. The quality and size of Northwestern apples is very fine.

Nearly a third of the prune crop of Oregon and Washington will be taken over by the allied governments. This purchase will amount to about sixteen million pounds. The prune crop is the largest ever produced, amounting to about 60,000,000 pounds, and of excellent quality. Mr. W. K. Newell, Assistant Food Administrator for Oregon, who is now in Washington, D. C., urges

that growers take unusual care in putting out their product, predicting that if the prunes of the Pacific Northwest make a good impression on the people of the allied countries it will mean the opening up of new markets in the future.

Clearing Land.—Various methods of clearing land in cut-over sections have proved very successful. There are several kinds of stump pullers on the market, and different brands of blasting powder. On many farms at the present time there are small tracts of woodland that might be cleared to a good profit. Much of this clearing can be done during spare time without interruption to the regular work, and fruit growers can profitably increase their tillable area. A new bulletin has just been issued on clearing land, Farmers' Bulletin No. 974. Every fruit grower who is interested in this subject should send for a copy of this bulletin.

At the recommendation of some of the county agents in different districts of Eastern Oregon growers in that vicinity have recently purchased 100 tons of powdered sulphur for drilling into the soil to increase available plant-food supplies. This experiment will be watched with interest by many fruit growers.

The Spokane Valley Growers' Union Spokane, announces the sale of the entire crop to be handled this year, of approximately 150 cars, to an Eastern firm. The price paid was \$170,000, making an average of nearly \$1.50 per box.

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Since the beginning of the war, we have spent for army use \$37,000,000 for flour; \$14,000,000 for sugar; \$43,000,000 for bacon; \$12,000,000 for beans; \$9,000,000 for canned tomatoes and \$3,000,000 for rice. These are only some of the large items in our army's bill of fare. We have spent \$126,000,000 for shoes; over \$500,000,000 for clothing, winter and summer; nearly \$150,000,000 for blankets.

Our axes for the army have cost over \$6,000,000; our rolling kitchens \$47,000,000 and field ranges \$1,500,000. The army is using 2,500,000 shovels costing one dollar apiece. Our motor trucks to carry supplies and ammunition cost \$240,000,000, and for horse-drawn wagons and carts we have spent \$37,000,000. Our 279,000 horses and 132,000 mules have cost us nearly \$100,000,000; to feed them has cost over \$60,000,000 and the harness for them nearly \$30,000,000.

These figures are large, but we have nearly 2,000,000 men in France and nearly as many in cantonments here, and the United States and the people of the United States, through the Liberty Loan, are making these soldiers as safe and as comfortable, as powerful and effective as possible.

Every subscriber to the Liberty Loan has helped, and every subscriber to the Fourth Liberty Loan will help to win the war.

Harvesting & Packing California Walnut Crop

By L. D. Batchelor, University of California Citrus Experiment Station, Riverside, California

A GENERAL review of the walnut harvest and methods used in preparing walnuts for market may be of interest to fruit growers who are about to enter this industry. In the following discussion the various steps in handling the crop, from the trees to the freight car, are briefly described.

The harvesting and packing of the walnut crop extends over a period of about two months. The harvest season usually begins about September 1, and as the walnuts mature the shucks crack open and the ripened nuts fall to the ground, leaving the shucks attached to the twigs. Dropping of the nuts is hastened by shaking the trees by means of hooks fastened on long poles. This makes only about two or three pickings necessary. Some trees have a tendency to ripen the crop all at once, while other specimens may mature the nuts throughout a period of two or three weeks.

Under normal conditions there is little or no difficulty experienced in shucking the nuts. Occasionally, however, they become sunburned and the shucks stick tightly to the fallen nuts. This difficulty is more pronounced on the light soils and in groves which are underlaid by gravel subsoil or which have lacked sufficient irrigation. Trees which are suffering for want of water, or trees which may have become too dry at any time during the growing season, often drop their nuts with the shucks on and shed a portion of their leaves at the same time; the nuts may or may not be sunburned in this case. The hand shucking of such nuts and searching for them in the leaves adds considerable to the cost of harvesting and should be prevented if possible. An application of irrigation water just before harvest aids normal maturity of the nuts and prevents some of the early dropping of leaves.

The methods of harvesting are simple, consisting of merely picking up the crop and bagging them in ordinary barley sacks. This work is generally done by Mexican labor under contract. The cost of such labor ranges from forty to fifty cents per sack or eighty cents to one dollar per hundred pounds.

The nuts are usually washed on the ranch by running them through a revolving cylindrical drum made of coarse wire netting on which a stream of water plays as the nuts pass through. This removes all dirt and small portions of husks. Barbed wire braces are sometimes woven across the cylinder to assist in removing the sunburned shucks.

In case the nuts are reasonably free from dirt and there are no attached portions of sunburned husks, the washing process may be omitted. Such nuts which have not been washed will bleach more readily than washed nuts. Washing may stain the nuts slightly, as portions of blighted husks in the wash water make it as highly colored as strong tea.

After washing, the nuts must be thoroughly dried before resacking. Methods

of drying vary with the size of the crop to be handled and climatic conditions. Small growers in the southern sections usually dry the crop in the open. The nuts are placed in shallow trays about six inches by three feet by six feet. The bottoms of the trays are made of laths placed about one-half inch apart. The nuts are not allowed to remain long in the direct sunlight after washing, as very rapid drying causes them to crack. This trouble is more acute with some of the poorly scaled varieties. During sunny weather the trays may be spread out for a few hours each morning and then stacked up again after the nuts have been stirred several times and become thoroughly warmed up. Such a process requires from five to seven days before the nuts are dry enough to go to the packing house.

Drying houses have been erected by some of the growers in an effort to save much of the labor in connection with the tray method. These houses are built with lath outer walls to give ample ventilation. The drying bins are made principally of wire cloth on a light wooden framework. The bins are about twelve inches deep, arranged one above another. The floor of each bin is built in sections, with each section held in place by a pivot. The pivots are attached to a lever, the movement of which dumps the contents to the bin below. The drying space is thus composed of six or seven shallow wire screen bins; and the nuts are thoroughly stirred as they are dumped from one bin to another.

Nuts will dry in such packing houses in from five to nine days, depending on the weather conditions, the location of the house and its surroundings.

At some time during the washing and drying process on the ranch, the nuts are picked over to cull out the inferior specimens. The cull grade includes all cracked and perforated nuts, as well as those on which a portion of husk is still sticking. In the most elaborate drying houses this hand picking of the culls is done both as the nuts pass over a belt on the way to the drying bins and again as they are carried on a belt coming from the bins to be sacked.

After being sacked on the ranch the nuts are delivered to the packing houses, where the crop is graded for size, bleached, and prepared for market. As each load arrives at the packing house it is sampled and the "crack" determined; that is, the number of good meats is determined in a hundred nuts picked at random. For example, one packing house takes a double handful of nuts from each tenth sack of a load and then fifty to a hundred of these nuts are cracked to find the percentage of good nuts. Thus a "crack of ninety" means there are ninety good nuts per hundred. This is usually the percentage demanded at the association packing houses.

The nuts are first screened to take out dirt, small sticks, etc. Also as the whole lot passes over the cleaning screen on

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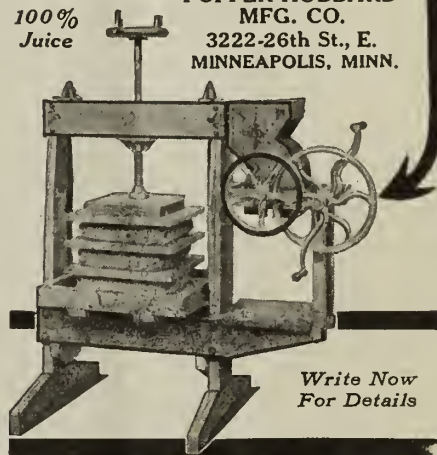
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the way to the cylinder grader, the nuts which have no meats in them and are therefore lighter than normal, are removed. The removal of these lightweight culls is accomplished by a suction grader which is regulated so it has sufficient power to readily pick up the blank nuts, but not power enough to pick up sound nuts.

The grades are determined by the size, and grading is accomplished by passing the nuts through a revolving wire cylinder. Nuts passing through square holes $1\frac{1}{32}$ inches in size are known as seconds, while those which drop through a $1\frac{1}{32}$ -inch hole are graded as firsts; and the grade of nuts which is too large to drop

Continued on page 17



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Fruit Jelly Stock

By W. V. Cruess, University of California, Berkeley

IN making ordinary jellies, the juice of suitable fruits is extracted by crushing and boiling and then, after clearing and the addition of sugar, placed in glasses where it "jells." When the fruit is available it may be inconvenient to make jelly owing to lack of time or to the high price of sugar. In such cases, it will often be found convenient and economical to use the fruit to make "jelly stock." This term is used for the fruit juice after extraction and before the addition of sugar. This jelly stock is quickly and easily prepared and may be preserved for any length of time. It remains liquid and can be made into jelly at any time when needed or when convenient. The advantages of this method are that it lessens the work during the fruit season and distributes the work and cost over the entire year. It is economical of space and jars and obviates the buying of large quantities of sugar months before it is needed. It also renders possible the making of blended jellies with various fruits which ripen at different times and thus increases the variety possible.

Fruits suitable for jelly stock: To make jelly, a fruit must contain both pectin and acid in sufficient amounts. This is practically always the case with the following fruits: Apples, some varieties of plums, lemons, loquats, guavos, cranberries, currants, blackberries, lo-

ganberries and Eastern varieties of grapes, such as Isabella and Concord. These are all suitable for making jelly stock. Other fruits are deficient in either pectin or acid, or both. Among these are apricots, peaches, pears, plums, figs, oranges, strawberries, feijoas and most varieties of ripe Californian (vinifera) grapes. These fruits, in most or all cases, contain both pectin and acid, though insufficient to produce a satisfactory jelly alone. However, when mixed with fruits containing a surplus of the ingredient lacking they may be used to produce excellent jellies and the ingredients which they do contain utilized. Oranges, apricots, strawberries or peaches, for example, if mixed with lemons, apples, currants or loganberries will make excellent jellies. These may also be prepared like jelly stocks and the material produced, while incapable of yielding jelly alone, can be blended with the jelly stocks, and jellies made, similar to those made by blending the fresh fruits, as described above.

General directions: The fruit is cut into small pieces or crushed to facilitate cooking and extraction of the pectin. A small amount of water is added to pulpy fruits. Very juicy fruits, such as loganberries and currants, do not require the addition of water. The fruit is boiled until tender and the hot juice separated by pressing through a coarse

cloth. A meat press is convenient for this purpose. The hot juice is then tested by adding sugar to a small portion and making a trial glass of jelly to ascertain if it contains sufficient pectin and acid. If deficient in these constituents, it may be concentrated by boiling down. When found satisfactory, with or without concentration, it is filtered through a jelly bag until fairly clear. This juice may then be sterilized in cans, jars or bottles and stored away until needed for jelly making. Jelly is made from this sterilized juice in the usual way by adding sugar and boiling down until the proper consistency is reached.

Specific directions are given below for apple, loganberry and apple-apricot jelly stocks. The directions given below can readily be modified to suit other fruits.

Apple Jelly Stock

1. Choose tart apples which are ripe, but not overripe. Sound waste apple cores and peels can also be used. Cut in quarters or smaller pieces.

2. Boiling: Place in pot or jelly kettle and cover with water. Heat to boiling and boil until tender. This will usually require not more than fifteen minutes' boiling.

3. Pressing: Place the hot fruit in a cloth, in a meat or fruit press and press out juice.

4. Testing: Test a small quantity of juice as follows: Place one glass of juice and one glass of sugar in a small pot. Boil until the liquid sheets or jells from a spoon. Pour into a glass, where it should jell in less than an hour.

If the juice will not set, boil it down to about one-half its volume and test again. Most apple-jelly stocks will jell without boiling down.

5. Filtering: Heat the juice to boiling and pour into a jelly bag. A felt, flannel or other heavy cloth bag will serve for a filter. The first juice which filters through will be cloudy. Pour this back and filter the whole lot until fairly clear.

6. Sterilizing: If the juice is to be kept in jars or cans, scald these in boiling water. Heat the filtered juice to boiling and pour boiling hot into the containers. Seal them hot and place on their sides so that the caps will be sterilized.

If ordinary bottles are used, fill the bottles with the hot juice. Cork with corks sterilized ten minutes in boiling water. Tie the corks down with string. Bottles closed by metal caps applied by a special machine may be used. A small hand-power machine of this kind can be obtained for a moderate price. Place the bottles of hot juice in a pot of hot water. The bottles should rest on a wooden screen placed in the bottom of the kettle to protect them against breakage by direct heat from the fire. The water should be brought to a boil and boiled four or five minutes. The bottles are then removed and the corks coated with paraffin. A wire basket to hold the bottles can be made to fit the kettle and greatly facilitate the work of sterilizing.

Apple-Apricot Jelly Stock

1. Prepare apple-jelly stock as above.
2. Prepare an apricot stock by pitting, covering the fruit with water, boiling, pressing, etc., as directed for the apple stock. If apples are not in season with the apricots, the apricot juice may be sterilized and stored until suitable apples are available.
3. Combine equal quantities of the apple and apricot-jelly stocks and test for jelly-making properties as directed for apples. If too little pectin is present, boil down the mixed juices until a satisfactory jelly can be made.
4. Filter through a jelly bag.
5. Sterilize in jars, bottles or cans as directed for apple-jelly stock.

Loganberry Jelly Stock

1. Crush the berries.
 2. Bring slowly to boiling and boil one or two minutes.
 3. Press out the hot juice.
 4. The residual pulp may be mixed with a little water, boiled ten minutes and pressed. The first and second juices may be combined or kept separate. The best jelly is made from the first juice alone, although a good jelly usually results from combining the two portions.
 5. Test for jelly-forming power by making a trial glass of jelly.
 6. Filter and sterilize.
- Other berries may be treated similarly. A blend of equal quantities of loganberry and strawberry-jelly stocks may be used. In the same way, many other combinations of different fruits may be prepared; e. g., pineapple-apple, peach-apple and raspberry-loganberry, etc.

Making Jelly From Jelly Stocks

Jelly is made from the sterilized juices in the same way as from the juice from freshly-boiled fruits. The following directions will give good results if the juice contains sufficient pectin and acid.

1. To each cup of juice add one cup of sugar.
2. Heat to boiling and boil until the liquid will sheet from a large cooking spoon or until the liquid boils at 220 degrees Fahrenheit, as indicated by a chemical thermometer inserted in the boiling liquid, or until the hot liquid tests 60 degrees Balling or 32 degrees Baume. The jelly is then ready to pour into glasses or jelly molds.

In small laboratory tests, the following yields of jelly stock per 100 pounds of fruit were obtained: Apples, 10 gallons; currants, 10 to 12 gallons; blackberries, 8 to 10 gallons; loganberries, 12 gallons. The yields will of course vary greatly with the ripeness and other condition of the fruit used. The results given, therefore, are merely approximate.

Commercial Production of Jelly Stocks

Large quantities of apple peels and cores go to waste or are used for vinegar making. This material could be extracted in steam-heated kettles, cleared in wine or fruit-juice filters, and sterilized in the ordinary "Sani-

tary" fruit cans or in metal-capped bottles in much the same way that fruits and fruit juices are now prepared commercially. Sound windfall and cull apples could be used in the same way. Similarly, loganberries too soft for canning could be used. Cull oranges and the waste peels of lemons from factories making citric acid are also suitable for producing jelly stocks. Culls from many varieties of fruits could be made into stock and blended with apple or loganberry-jelly stocks to give a great variety of jelly materials. With proper advertising, these jelly stocks should find in time a market for use in the household and bakers' supply factories. Such jelly stocks could be used instead of gelatine for desserts, and would be more palatable and of higher nutritive value than jellies made with gelatine. These points would have considerable advertising value. A ton of apples would produce at least 150 gallons of jelly stock, and this at a wholesale price of 8 cents per quart in quart cans would bring \$48 per ton for the fruit. Loganberries will produce at least 200 gallons per ton. This at the above rate would bring \$64 per ton. It should be possible to sell a No. 2½ fruit (30 fluid ounces) can at a retail price of 15 cents. One No. 2½ can contains enough juice for approximately five 6-ounce glasses of jelly, making a cost of 3 cents per glass for the jelly stock. The sugar for each glass of jelly would cost about 2 to 3 cents, depending on the price of sugar. Thus the total cost for material per 6-ounce glass would be in the neighborhood of 5 or 6 cents. Where the jelly stock is bought in cans by the housewife and made into jelly as needed, it is not necessary to have a large supply of jelly glasses.

Dried Fruits as Jelly Stock

Apple peels and cores are dried and used extensively by commercial jelly factories. Ordinary dried apples can be used for the same purpose. The dried fruit is soaked in water until it reaches its original volume. The fruit is then boiled until tender. The juice is pressed out, filtered and made into jelly in the usual way. Dried berries, lemon peels, etc., can be used in a similar way. Fruits lose flavor during the drying process, however, and jelly made from such material is poorer in quality than that made from the juices prepared from the fresh fruits.

Apples Are Food and Medicine

The apple in its composition consists of vegetable fibre, albumen, sugar, gum, chlorophyll, malic acid, earthy lime salts and phosphates. Food chemists have placed it on record that apples contain phosphates more abundant than any other edible product. The juice of apples becomes converted within the body into alkaline carbonates, and will neutralize acid products of indigestion or gout. The acid of apples (malic and tartaric) are of signal use for persons of sedentary habits whose livers are torpid; they serve to eliminate from the body noxious matters which would, if retained, render the brain heavy and

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dull, and work other mischief. Some such experience has led to our taking apple sauce with roast pork and similar rich dishes.

The digestion of a raw apple when ripe occupies only eighty-five minutes. A French physician has lately discovered that the bacillus of typhoid fever cannot live beyond a very short time in apple juice, and he therefore advises persons who reside where drinking water is not beyond suspicion to add a little cider or crude apple juice to it. Francattelli, an Italian physician, famous in his day, gives as a recipe for apple-water to be drunk during fever the following: "Slice up thinly three or four apples without peeling them. Boil these in a clean saucepan with a quart of water and a modicum of sugar until the slices become soft; then strain the apple-water through a piece of muslin into a jug, and serve it cold to the patient. If desired a small cutting of the rind from a lemon may be added to give flavor." Among the Thebans of old the apple was held sacred to Hercules. The medicinal properties of the apple are many and important, and are well summarized in the couplet which tell that one apple a day will keep the doctor away. It is, besides a delicious and economical article of food, whether eaten raw or cooked, with or without the accompaniment of other fruits.—*The Fruit World*.

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Where there is a big family to be fed through the winter and a rush of summer work, the surplus of vegetables might well be salted down. The process is exceedingly simple and the only equipment needed is good water-tight kegs. While salted vegetables may not equal fresh in quality, they help materially to build up the food reserves, and when they are well cooked and seasoned, the flavor, though different from that of fresh vegetables, is good. Vegetables put up as directed will keep their crispness and color.

Gather vegetables when in the best condition and pack while they are crisp and tender. Cover top with grape leaves, chard or horseradish. Weight with a clean stone resting on an inverted plate. Do not allow molds to form, and keep vegetables covered with brine. When all bubbling has ceased, about a week after packing, cover the surface of the brine with cottonseed oil or melted paraffin. Store in a cool place and examine once or twice a week for a month. For the brine allow one and two-thirds cups of salt to one gallon of water. This is a 10 per cent salt solution. For a salt-and-vinegar solution allow three-quarters cup vinegar to one gallon of above solution.

Peppers.—Select medium large, plump green peppers. Remove stem and enough of the tops to remove seeds. Follow directions above, using the salt-and-vinegar solution. When taken from the brine, peppers should be firm, crisp, of good color and spicy to astringent in taste.

Green Tomatoes.—Salted green tomatoes may be made into tomato stew, stuffed tomatoes, breaded tomatoes, salad and pie, or converted into mincemeat and chutney. Choose well-developed green tomatoes and pack in salt solution. Green tomatoes packed in salt-and-vinegar solution are good for salads and relishes. When taken from the brine the green tomatoes will be slightly discolored but firm and of good quality. Soak in cold water for two hours before using.

Ripe Tomatoes.—Select medium-sized ripe tomatoes, free from cracks or bruises, and pack in brine solution. Follow directions and your tomatoes will be firm and of good color when removed from either the brine or the

salt-and-vinegar solution. Ripe tomatoes preserved in the salt solution generally require soaking for two hours before being used. After this soaking the skins slip off easily, and the tomatoes can be used as though fresh. For soups or scalloped or casserole dishes, soaking for one hour is usually sufficient, for the excess salt seasons the other ingredients. Ripe tomatoes preserved in the salt-and-vinegar solution require soaking for only about thirty minutes. When used in combination with fresh vegetables they need not be soaked at all. The skins slip off easily, and the flesh is firm. The color and the flavor of the tomatoes are practically no different from those of fresh tomatoes. Slices of the tomatoes may be served on lettuce with sliced cucumbers.

Stuffed Green Tomatoes.—Soak salted green tomatoes for two hours. Remove a thin slice from the top of each, take out the seeds, and fill the cavity with a mixture of boiled rice, well seasoned with onions, paprika and ground peanuts. Place the tomatoes in a baking dish and add sufficient stock to almost cover them. Cover the dish and bake it slowly until the tomatoes are tender, about one hour.

Stuffed Green Peppers.—Soak the peppers for two hours. Boil until tender and stuff with the mixture used for tomatoes. Cover the top with buttered crumbs. Bake for thirty minutes. Any kind of left-over meat may be used instead of peanuts.

Ripe Tomato Salad.—Use tomatoes that have been preserved in salt-and-vinegar solution. Soak them for thirty minutes. Peel them and remove the stem ends and the seeds. Fill the cavities with minced green pepper that has been preserved in salt-and-vinegar solution and rinsed but not soaked, and with celery moistened with salad dressing, place a spoonful of the dressing on top, and serve the tomatoes on lettuce or finely sliced cabbage.

Green Tomato Pie.—2 cups salted green tomatoes, $\frac{3}{4}$ cup syrup, 2 tablespoons cornstarch, 2 tablespoons butter, 1 teaspoon grated lemon rind, 2 teaspoons lemon juice or vinegar. Soak the tomatoes for two hours, cut them in small pieces, and cook until tender. Add the other ingredients and cook the mixture until it is thick and clear. It may be used for a two-crust pie, or it

may be placed in a lower crust and covered with a meringue.

Mock Mincemeat.—3 pounds salted green tomatoes, 2 pounds apples, 1 cup chopped suet, 2 cups molasses, 1 cup corn syrup, 1 pound raisins, 1 cup vinegar, 1 teaspoon cloves, 2 tablespoons cinnamon, 1 teaspoon allspice, 1 teaspoon nutmeg. Soak the tomatoes for two hours and chop them fine. Chop the apples. Add the other ingredients and cook the mixture until it is thick. This mincemeat will keep for some time in a covered jar.

Green Tomato Conserve.—1 pint salted green tomatoes, 1 tart apple (diced, not pared), 2 cups syrup, juice of one lemon, grated rind of half lemon. Soak the tomatoes for two hours and dice them. Cook the tomato and the apple in a small amount of water until they are tender. Do not drain them. Add the other ingredients and cook the mixture until it is thick and clear. If desired, about one tablespoon of preserved ginger may be added.

The Fuel Value of Wood

Persons who plan to relieve the coal shortage this winter by burning wood can figure, roughly speaking, that two pounds of seasoned wood have a fuel value equal to one pound of coal, according to experts of the Forest Service. While different kinds of wood have different fuel values, the foresters say that in general the greater the dry weight of a non-resinous wood the more heat it will give out when burned.

For such species as hickory, oak, beech, birch, hard maple, ash, locust, longleaf pine or cherry, which have comparatively high fuel values, one cord, weighing about 4,000 pounds, is required to equal one ton of coal.

It takes a cord and a half of shortleaf pine, hemlock, red gum, Douglas fir, sycamore or soft maple, which weighs about 3,000 pounds a cord, to equal a ton of coal, while for cedar, redwood, poplar, catalpa, Norway pine, cypress, basswood, spruce and white pine two cords, weighing about 2,000 pounds each, are required.

Weight for weight, however, there is very little difference between various species. Resin affords about twice as much heat as wood, so that resinous woods have a greater heat value per

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The available heat value of a cord of
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moisture present. When the wood is
green a part of the heat which it is
capable of yielding is taken up in
evaporating the water. The greater
amount of water in the wood the more
heat is lost.

Furthermore, cords vary as to the
amount of solid wood they contain,
even when they are of the standard
dimension and occupy 128 cubic feet of
space. A certain proportion of this
space is made up of air spaces between
the sticks and this air space may be
considerable in a cord of twisted,
crooked and knotty sticks. Out of the
128 cubic feet of a fair average of solid
wood is about 80 cubic feet.

This, however, applies to the stand-
ard cord, in which the sticks are cut
to four-foot length and piled four feet
high and eight feet long. Instead of
buying the four-foot lengths, however,
most people nowadays have the sticks
cut into two-foot lengths by a gasoline
saw. This results in a saving of both
time and labor. The purchaser should,
however, take care to see that he gets
full measurement when wood is bought
in this way. In some parts a stack of
16-inch wood four feet high and eight
feet long is commonly sold as a "run"
or a "rick," but contains only one-third
of a cord.

Where wood is to be burned in a
stove or furnace intended for coal it
will be found desirable, the foresters
say, to cover the grate partly with sheet
iron or fire brick, in order to reduce the
draught. If this is not done the wood
is wasted by being consumed too fast
and makes a very hot fire, which in a
furnace may damage the firebox.

It is pointed out, however, that heat
value is not the only test of usefulness
in fuel wood, and since 95 per cent of
all wood used for fuel is consumed for
domestic purposes, largely in farm
houses, such factors as rapidity of
burning and ease of lighting are im-
portant. Each section of the country
has its favored woods, and these are
said to be, in general, the right ones to
use. Hickory, of the non-resinous
woods, has the highest fuel value per
unit volume of wood and has other
advantages. It burns evenly and, as
housewives say, holds the heat. The
oaks come next, followed by beech,
birch and maple. The white pines have
a relatively low heat value per unit
volume, but have other advantages.
They ignite readily and give out a
quick, hot flame, but one that soon dies
down. This makes them favorites with
rural housekeepers as a summer wood,
because they are particularly adapted
for hot days in the kitchen. The same
is true of gray birch, or "white birch,"
as it is often called in the regions in
which it abounds. With the resinous
pines a drawback is their oily black
smoke.—*Western Farmer.*

Harvesting and Packing, Etc.

Continued from page 13

through the $1\frac{1}{32}$ -inch hole is known as
the Jumbo grade. The budded nuts
(chiefly the Placentia variety) are
divided into two grades, firsts and
seconds.

From the grader the nuts pass on a
belt to the bleacher. There are several
types of bleachers in use and two dis-
tinct materials used for bleaching pur-
poses. The end sought in any case is to
thoroughly wet the entire surface of the
nut with the bleaching liquid, thus giv-
ing the shells a uniform light tan shade,
free from discolorations.

The bleaching material which has
been the longest in use is a mixture of
chloride of lime, sal soda and sulphuric
acid. The liberation of chlorin gas in
this mixtures brings about the bleach-
ing action. The nuts are brought in
contact with this bleach by passing
them slowly along a spiral groove

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PACKS BEST

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Two large evaporators there. Make good prop-
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through a rotating wooden cylinder.
A small stream of the bleaching mate-
rial is constantly passing through the
cylinder and by the rotating action the
nuts become thoroughly wet with the
liquid.

The other bleach commonly used is
electrized salt water. Here also the
free chlorin is the bleaching agent. An
electric current of one hundred amperes
and about a four per cent salt solution
usually give good results. The appar-
atus consists of a comparatively small
porcelain jar or cell containing the
electrodes, through which passes a con-
tinuous stream of salt water mixed in a
preliminary tank. After passing through
the cell for treatment, it goes to a stor-
age tank, thence it is applied to the nuts
by means of a mist spray. The spray-
ing takes place as the nuts pass slowly
through a wooden tunnel arrangement
twenty-five to thirty feet long. The



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means of carrying the nuts through this tunnel vary: small rollers may be used, or an inclined wire cloth tray which is continually shaken laterally, thus causing the nuts to roll along gradually in a single layer.

From the bleacher the nuts are elevated to the drying bins. Some packing houses carry them through wooden tunnels, through which a current of warm air is passing, on their way from the bleacher to the drying bins. This partially dries the nuts, so they are ready to bag in a few hours. If the nuts are not passed through warm air the drying process in the bins will require from twenty-four to forty-eight hours, depending upon the weather.

While the nuts are passing along the belt from the bleacher to the drying bins they are continually watched by several persons, who pick out the poorly bleached and otherwise inferior nuts. Such culls are sent to the cracker, where they are cracked and their meats sold, after being graded according to color and general condition.

As the nuts are emptied into the drying bins they are usually distributed among several bins at the same time. Again when they are drawn out and sacked several bins are emptied at once. This thorough mixing assists in putting out a uniform product as a whole, considering the variability of seedling walnuts. One hundred pounds of nuts is put in each sack.

Nuts put up as thus described, after being thoroughly graded and culled, can be sold and guaranteed to contain a

certain percentage of good nuts. The present year the association houses guarantee a crack of 87% good sound merchantable meats with their seedling nuts and 90% with their budded nuts. These grades may often actually crack from 95% to 97% sound meats.

Giving.

Just money! That is all we're asked to give. He gave his life, Jim. He'd have liked to live, For Betty—bless her shy young heart—had only The week before he left put on his ring. How long her life will be to her, how lonely, With nothing of him but remembering! She never flinched, nor he, my son; they gave; She working still, and Jimmie in his grave. And now today we're asked again to save, And give, give, give the country what we've sweat And toiled to earn. It's hard for all—and yet, We safe, we calm, we fortunate, we living, I wonder, dare we, dare we call this giving?

MARY CAROLYN DAVIES.

Associate, Co-operate.

By "Pippin."

Whether one reads New Zealand, Australian, American, or other literature on the fruit industry, one sees an insistence on two needs—association, co-operation. Hence these verses:

If you would like a profit rate
To keep your home in decent state,
Associate.

If you would like to dodge the fate
Which smites the foolish, soon or late,
Co-operate.

To scare the wolf from orchard gate,
And free yourself from care's black weight,
Associate.

Don't dubitate, don't hesitate,
Don't stupidly procrastinate;
Co-operate.

Associate, co-operate,
And keep your system up-to-date.

Co-operate, associate,
The time has passed for dull debate:
Associate, co-operate.

—Otago Daily Times.



The above illustration shows the new warehouse and cold storage plant of Bardwell Fruit Co., Medford, Oregon, recently erected, in which Cabot's Insulating Quilt was used.

U. S. Bureau of Markets, Etc.

Continued from page 7.

structions covering many of the crops, like its bulletin on the subject of loading Western cantaloupes. Many others are prepared and offered for free distribution.

The storage of crops, when not in transit, is another vital feature of the fruit industry. Aside from cold-storage plants, which are necessary and always expensive, this Bureau has worked to develop proper principles of common storage, where no refrigeration is employed, and has developed them so far that, in the past year, between 40 and 50 such storehouses have been built in the Northwest, adapting the standard plans to local conditions. In some of them, the past season's crop of apples stored up to March was in just as good condition as in cold storage. They have been held later, but it is not recommended. Keeping apples successfully in common storage is not entirely a question of handling in storage. They must be grown properly, cultivated, watered, sprayed, harvested at the proper time, packed properly, the storage must be built properly, and, lastly, it must be handled properly.

The newest phase of the Bureau's activities to affect the horticulturists is the enforcement of the Federal Food Inspection Law, which was passed by Congress last August. Since foods were first raised in the country and sold in the city, it has been one long wrangle about the condition in which they arrived in market. The fact of the loss to growers, shippers and consumers has been long recognized, but the responsibility was not traced, so it resulted in a constantly augmented ill feeling between the shippers and the receivers who, in fact, were merely quarreling over the profits while the public was paying the bill. In any market in the country, retrimmed cabbage and celery, and repacked tomatoes, and various other products are quoted, which means that a considerable part of what was shipped by the grower is thrown away by the city dealers and, if there is not to be a loss by one of them, the consumer must pay enough for the fraction that he receives to reimburse the grower for the whole article. The agricultural interests have clamored for government inspection for many years, because they thought that when a dealer reported goods as arriving partially or all decayed, he was really stealing them from them and selling them at a premium. Therefore, the law was framed for the protection of the shipper who might be a thousand miles away from his product. Inspection may be had upon his application or that of his representative, but is not given on the request of the receiver who, if he has bought f.o.b. shipping point, and the goods arrive decayed, cannot invoke the service of inspection to protect himself.

There is one fundamental that must never be overlooked. No perishable product improves in transit as regards any condition that was detrimental to it

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"I believe the Goulds 'Pomona' Barrel Pump is the best for small fruit growers," writes W. B. Nissley in charge of Vegetable Gardening at the New York State School of Agriculture, Long Island. "It is of sufficient strength and is large enough to maintain a high, even pressure, which is one of the most important things to keep in mind for successful spraying." Ask your dealer to show you

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when it started. In spite of the interests that asked, and the way the law was worded, the actual working of it is rather an indictment of the shipper than the city dealer. I do not mean by that the dealers are all honest. But actual reports show conditions even worse than the trade previously reported because, for many years, it has been charging up a certain per cent of loss to overhead and shrinkage and letting the consumer pay the bill, when as a matter of fact inspection has demonstrated that the goods were infected before they started to market with a disease that later consumed them. If

infected while growing, they are inferior when shipped and probably spoiled when they arrive in market.

In its inspection activities the Bureau of Markets co-operates fully with the Bureau of Plant Industry. Both are animated with a desire to give actual service and enable the country to get full value from its marvelous productions. The rescue of the citrus industry from bankruptcy and annihilation is a monument to the work of the Bureau of Plant Industry. After developing to great proportions, it was about to be wiped out because of the ravages of blue mold, which, up to a few years



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ago, were nearly destroying everything shipped. Mr. Powell, now the head of the distributing agency in California, while with the Department of Agriculture, perfected the methods of disinfecting by which every lemon, orange and grapefruit is treated now before

being shipped. The cantaloupe industry of the Imperial Valley was destroying itself by a nefarious practice until experiments of the Bureau of Markets proved conclusively that wrappings of the cantaloupes, which was done to enhance the appearance in ad-

vertised brands, was injurious to the product and often caused 40 per cent loss on long hauls.

In a jar in my possession are infected potatoes exactly as they arrived in Portland from California. These potatoes were a total loss; the freight paid

on them a total loss. The cost of handling, a total loss. They were infected before they left the field and never should have been shipped. The chances are that, previous to government inspection at the receiving end, the dealer would have reported to the shipper that he owed him the freight on the car and the shipper would have called the dealer a thief.

In the cauliflower deal of last winter the growers of California have their only return in sight in the form of claims against the railroad company because their crops spoiled in transit. I am not judging their case, but with this scientific information in the hands of the railroad officials and the government, and the railroads themselves in the hands of the government, dealers are going to have a more difficult time in collecting on claims unless they can give their shipments a clean bill of health along with the routing. The original infection leaves room for secondary rots to develop—pink and blue and various other hues—which are usually in full swing by the time it is unloaded at market.

I know that the fruit industry of the Northwest is on a high plane and conducted by growers of equal, if not superior, intelligence to those of any other part of the country, and I would not presume to suggest that the fruit growers need any improvement in their methods were it not that I know there are some growers hiding behind the virtues of the others. I have seen apples from the Northwest, dumped out of boxes in Chicago, that were not bigger than radishes. I saw Jonathan apples in Chicago in April of this year were sold in the Northwest f.o.b. shipping point and, when taken out of the car, were in such condition that the Chicago buyer could sell them for only fifteen cents above what the freight cost him. They had been held in storage and deteriorated there. Recently I saw peaches in Portland that were so packed that every one was bruised when the boxes were opened, and would not keep twenty-four hours. Inspection at the receiving end is showing the growers such things that they must modify.

Some writers have laid stress upon the fact that horticulturists in general, and agricultural professors in particular, deal almost exclusively with the production of crops and their handling by the growers, but that nowhere in their work do they deal extensively with the marketing of the products after they are produced. They admit that that is a serious weakness of their work. As its name implies, one of the chief interests of our Bureau is the study of the marketing of perishables. Extensive investigations have been carried on in this country and even abroad, for last year the Bureau of Markets sent a special investigator to the Orient to discover possible additional outlets for the apple crop of the Northwest.

It has organized a market reporting service in which the Bureau attempts to keep before growers and shippers



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alike a perpetual picture of the conditions under which they must do business each day, which has in the foreground the wholesale prices in the important cities and the f.o.b. prices at the important shipping points, and in the background, the total movement of each line of fruit and vegetables from competitive territories to competitive

markets. Thus, the grower knows the daily shipments and the destinations as shown by the original bill of lading and the arrivals upon the principal markets he reaches. The facilities to gather and distribute this information comprise a network of leased telegraph wires covering the entire country, linking the consuming centers and producing terri-

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tories. About thirty permanent offices are maintained in the larger cities and, in the course of the year, more than double that number of temporary offices are opened in producing territories, conducted during the time of harvesting and then closed that the men and equipment may move on to another section.

The Bureau has intimate and confidential relations with every railroad superintendent in the country who wires nightly a report of the shipments on his division. A night telegraphic and clerical force is maintained at Washington, D. C., where these reports are received and tabulated by the time the regular day force come to work in the morning. They are then wired to all the Bureau offices and the amount of the reports is of such volume that the leased wires are going in all of them eight hours, and in many of them twelve and sixteen hours a day.

Most growers are familiar with the news service given on apples and potatoes and may realize the magnitude of the work when they know that the potato growers of Colorado, Minnesota, Wisconsin, Michigan, Maine, New York, New Jersey, Virginia, Florida and Texas are served during their harvesting and marketing periods, and in the same way the cantaloupe industry, tomatoes, peaches, pears, strawberries, cabbage, cherries and onions are provided for in all parts of the country, besides many crops of lesser extent. This service was inaugurated in times of peace, but has been greatly extended in time of war. Its activities have been so favorably received that the industry will probably never be without its government assistance. I have tried to touch only upon those features of the work that affect the horticulturists, but the Bureau has numerous other activities, many of which are directly concerned with the prosecution of the war, to which a large part of our time is devoted.

The increasing war demand on the jute industry of India for burlap makes necessary the utmost conservation of burlap. More than three-fourths of the burlap imported is used by farmers and fruit growers in shipping farm products. Every fruit grower is urged to conserve to the fullest extent, washing and drying the soiled bags and storing in a dry place so they will not become mildewed. Saving burlap helps to save shipping to supply the American armed forces abroad.

The International Sugar Commission took stock of the sugar on hand, subtracted Allied requirements and allotted America her share, which by count is two pounds per month per person.

Dates of 1918 Fairs

Washington:
Goldendale, Washington—October 2-5.
Lynden—October 4-5.
Oregon:
Moro—October 9-12.
Portland—November 18-23.
St. Helens.
Idaho:
Lewiston—November 7-13.
Filer—October 1-5.

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Weekly Oregonian ... 1.00

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McCall's Magazine... .75
Twice a Week Spokes-
man-Review 1.00

Total\$2.75
All for 1.50

Statement of the Ownership, Management, Circulation, Etc.

Required by the Act of Congress of August 24, 1912,

of "Better Fruit," Published Monthly at Hood River, Oregon for October, 1918

State of Oregon, }
County of Multnomah, } ss.

Before me, a notary public in and for the state and county aforesaid, personally appeared Z. C. Seabrook, who having been duly sworn according to law, deposes and says that she is the publisher and business manager of "Better Fruit," and that the following is, to the best of her knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse side of this form, to-wit:

1. That the names and addresses of the publisher, editor, managing editor, and business manager are:

Publisher, Better Fruit Publishing Company, Portland, Oregon.
Editor, Z. C. Seabrook, Portland, Oregon.
Managing editor, Z. C. Seabrook, Portland, Oregon.
Business manager, M. R. Seabrook, Portland, Oregon.

2. That the owners are: (Give names and addresses of individual owners, or if a corporation, give its name and the names and addresses of stockholders owning one per cent or more of the total amount of stock.)

Better Fruit Publishing Company, Inc., Portland, Oregon.
Estate of E. H. Shepard, Portland, Oregon.

3. That the known bondholders, mortgagees, and other security holders owning one per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company, but also in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by her.

5. That the average number of copies of each issue of this publication sold or distributed through the mails or otherwise, to paid subscribers during the six months preceding the date shown above is: (This information is required from daily publications only.)

Z. C. SEABROOK,

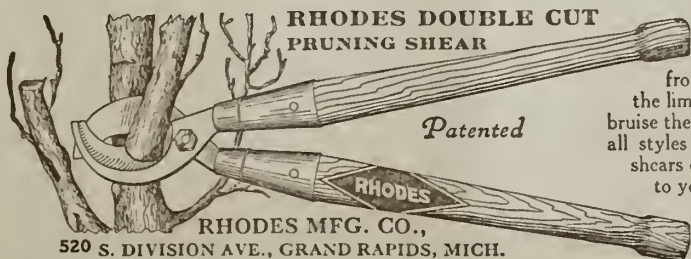
Signature of Publisher and Business Manager.

Sworn to and subscribed before me this 23rd day of September, 1918.

(Seal)

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